

# “EFFECT OF COST OVERRUN”- A CRITICAL REVIEW

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**Abstract**— The present day contracting appears to have more of contradictions than the clarity that is needed. This is mainly because of the variation that creeps into the description in the bill of quantities and specifications. Many times the related drawings may not reflect the specifications. Such issues can disturb the coating structure presented by the executing organization leading the extra claims which can be called as “cost overruns”. This leads to time delay in the project which again adds to the cost. On many occasions the cost increase due to time delay is more than the other causes that result in increase in cost budget, which again is termed as cost overrun. Review of the published literature indicates that the study of cost overrun appears to have been done in a more generic way. This particular presentation studies the effect of certain specific aspects causing abnormal increase in the cost and attempts to provide suggestions on remedial measures.

**Keywords**— cost overruns, questionnaire

## I. INTRODUCTION

A cost overrun, also known as a cost increase or budget overrun, involves unexpected costs incurred in excess of budgeted amounts due to an under estimation of the actual cost during budgeting. Cost overrun should be distinguished from cost escalation, escalation is avoided with an anticipated growth in a budgeted Due to change in the government policy, price increase due to transportation cost, and force majeure reasons. From the study it appears that many of the projects get hampered due to the increase in the cost during execution and leads to litigations such as arbitration, stoppage of works etc. In today’s market cost overruns are still occurring in most of the project, which implies that there appears to be a possibility in working on this topic and finding to reduce cost overruns. Hence large volume of research has been carried out in various aspects causing cost overruns. It is to be noted here that the nature of the project, their conditions of contract and specifications changes are few reasons that can be attributed to the cost overruns in the projects

The cost overrun in the projects appears to be common phenomena and many of the organizations concentrate only on the claims but a scientific back analysis into this aspect appears to be very scares unlimited, although a large volume of research has been done on various aspects of cost escalation and its effects. A comprehensive analysis appears to not been done so far. It is to be noted that there are many aspects in projects of multiple related activities as seen in

infrastructure contracts and projects like power projects and industrial establishments that hurts the financial stability of the project. The present paper discusses certain important details based on the statistics collected.

Cost overrun is common in infrastructure, building, and industrial projects. Many major construction projects have incurred cost overruns. Cost estimates used to analyse the degree of cost overruns that have occurred.

In India day by day the cost of construction is increasing drastically due to many factors such as hike in labour price, land rates and rate of materials. If the cost overruns are eliminated or at lease drastically reduced, then it will be a economic progress for the builders as well the clients.

## II. LITERATURE REVIEW

Extreme studies have been carried out on the various aspects that cause cost overruns. Only certain specific and important papers are discussed below

According to **Doo-Yearn et.al (2011)** Construction equipment's such as excavators, forklifts, loaders have unique power train mechanism, Due to heavy work load, and long daily operative hours compared to the automobile industry, the economic and environmental impact is greater than that of the automobile industry. There are opportunities in the industry for energy saving technologies like hybrid power trains. Hybrid loaders and forklifts will soon become a reality.

According to **ANu V. Thomas (2014)**the productivity of subcontracted labour is significantly higher than the productivity of directly employed labour by 33%.

**T.Subramani et.al (2014)** have stated that the Indian construction company plays an crucial role in development of the country’s infrastructure. The results from a questionnaire showed that the major causes of cost over runs are slow decision making, poor schedule management, increase in material/machine prices, poor contract management, poor design/ delay in providing design, rework due to wrong work, problems in land acquisition,

wrong estimation/ estimation method, long period between design and time of bidding/tendering.

**Abdussalam Shibani et al. (2015)** have said that the reasons of cost overruns are poor cost management, the lack of effective critical success factors like appropriate planning in the initial stages, skills of contractor and architect, regular co-ordination between contractor and client are leading to cost overrun in construction projects in India.

According to **Bashir O.Ganiyu(2015)** The responsiveness of the construction industry to the preservation of natural resources for the benefits of future generation (sustainability) has been very poor in developing countries, Eliminating material wastage and complexities in housing processes are the core factors which when achieved will reduce construction cost to a minimum, reduce negative impact of construction on the environment while maintaining high quality in the housing constructed.

**Dinesh Bhatia et.al(2016)** has revealed the main factors and reasons causing schedule and cost overruns in construction of residential projects included Delays in decision making, Poorly performed time estimation of the project tasks and activities, Unforeseen circumstances, Internal conflicts within the project team, Poor work organization and planning, No advanced action taken by any of the parties involved.

### III.METHODOLOGY:

The factors are categorised into the categories of general, labour and man power influence, material influence-inventory control, plant and machinery, influence of proper administration and management. The present study involves a detailed analysis of the performance details relating to the various contracting agencies in running their business form tendering stage to completion of the project and collection of final bills and other retaining amounts. This sort of study requires collection of factual data that need to be realistic and accurate so that any conclusion derived out of it can be reliable to a large extent. To achieve this, the following steps were taken

- Preparation of a questionnaire to collect and analyze data on the categories of general, labor, material, plant and machinery and management aspects that cause cost overruns in construction
- Distribution of questionnaire among commercial promoters, constructors and constructors of manufacturing facilities and to find solutions and methods to avoid and prevent cost overruns

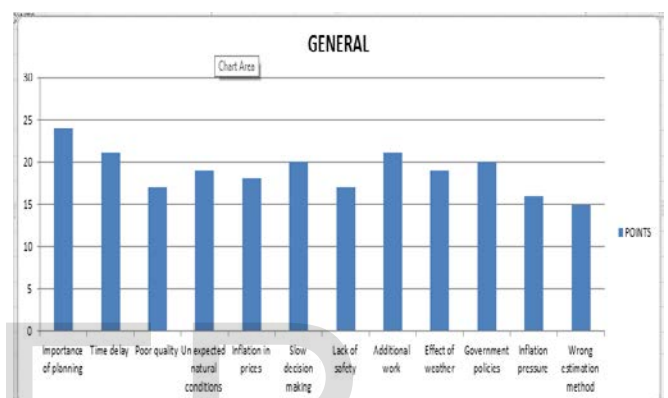
The Survey forms were designed in such a manner that identifying various contributing factors such as manpower, plant and machinery etc. in few cases, such that were obtained through personal discussions also. The data thus obtained were evaluated based on the standards scale before any conclusions were drawn. The organizations were selected in such a manner that there is a wide spectrum of activities that can be covered. There were number of general

builders, structural steel contractors and the piling agency. Such a spread is expected to cover major issues that influence the price increase

### IV.RESULTS ANALYSIS AND DISCUSSION

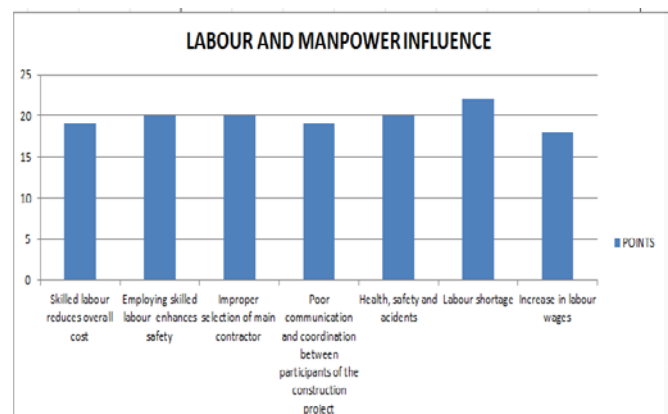
The results based on the answers obtained through the questionnaire were analysed by putting them in a weighted average format and the outcome has been plotted in the form of bar charts for the selected few aspects and they are discussed below.

In the general criteria, all factors other than price increase and judgement error in estimation have been covered. This data is mentioned in fig 1.



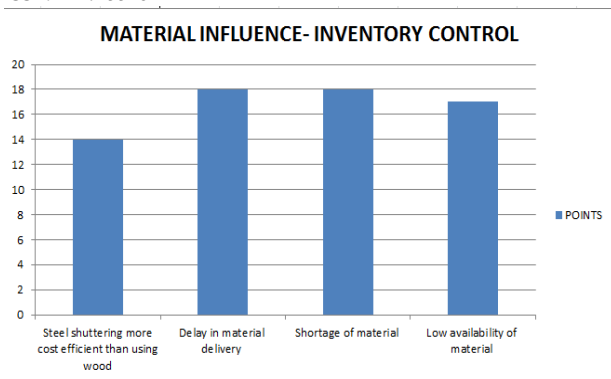
**Fig 1- General**

In the sub heading of labour and manpower influence importance has been given to factors such as labour shortage, improper selection of sub-contractor, and in health safety and accidents as shown in fig 2.



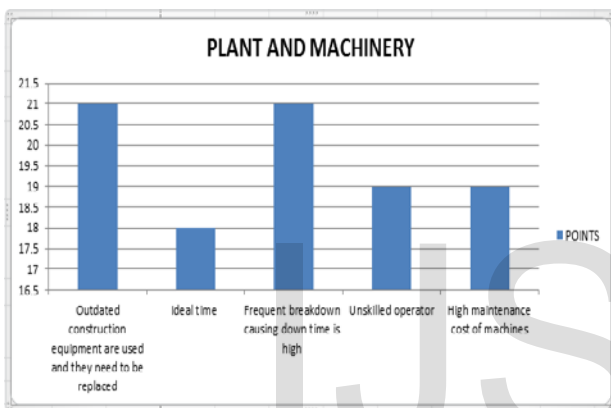
**Fig 2- Labour and Manpower Influence**

In the criteria of material influence inventory control, it seems that delay in material delivery and shortage of material are the major factors contributing to cost overruns mentioned in fig 3



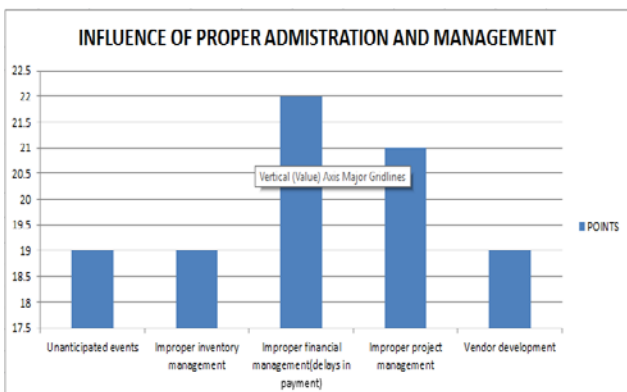
**Fig 3 - Material Influence –Inventory Control**

In plant and machinery, factors such as ideal time and high maintenance costs are neglected which results in cost overruns. Mentioned in fig 4.



**Fig 4 - Plant and Machinery**

In fig 5 the criteria of influence administration and management, factors such as improper project and improper financial management seems to be the major factors contributing to cost overruns.



**Fig 5 - Influence of Proper Administration and Management**

**V. CONCLUSIONS**

For the results it can be seen that plant and machinery and administration- management have the major influence on the cost overrun. Inventory control and manpower management follow in causing increase in the quoted price. Primarily the plant and machinery breakdowns have to be prevented and skilled operators are to be used. The contracts department should have a separate team for back analysis of the cost incurred at the site while preparing the monthly profit and loss statement. This will help to identify the items where there is going to be an increase in the price quoted. The bottom line of the study is “prevention is better than cure” and avoid claims that can create ill will with the owner and the consultant.

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